ENGINEERING NEWS-RECORD

al Canadian Air Force engineers clear beach for 4,700-ft. runway in British Columbia.

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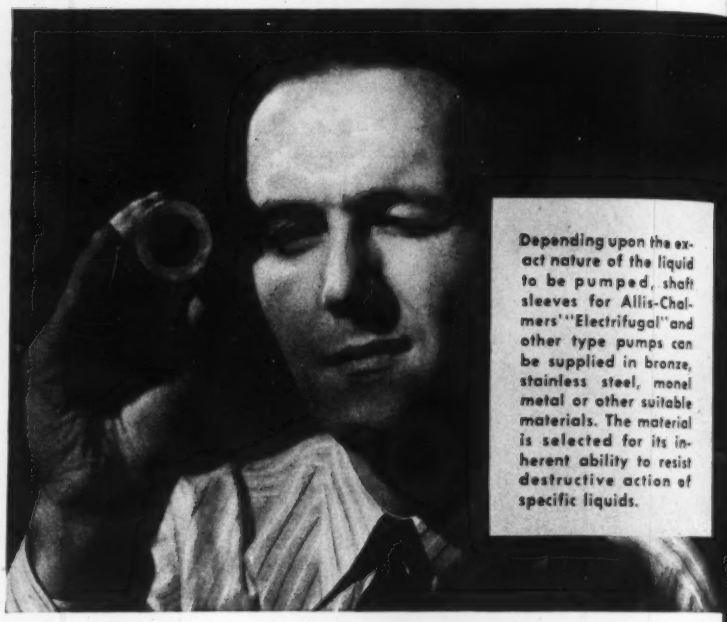
[PUMP TIPS FROM ALLIS-CHALMERS — ONE IN A SERIES]

How to make SLEEVES Last Longer . . .



Depending upon the exact nature of the liquid to be pumped, shaft sleeves for Allis-Chalmers' "Electrifugal" and other type pumps can be supplied in bronze, stainless steel, monel metal or other suitable materials. The material is selected for its inherent ability to resist destructive action of specific liquids.

AS WITH MANY pump troubles, excessive sleeve wear is apt to trace back to misalignment of pump and motor. For when shaft is deflected, sleeve is apt to wobble within the packing — accelerating friction and wear.

So serious is this problem of misalignment, that Allis-Chalmers engineers were led to develop, for many applications, the famous "Electrifugal" pump — in which both the motor and pump impeller are mounted on one shaft and in one frame.

In such a pump the elements cannot get out of line — and danger of excessive sleeve wear is minimized. However, many pumps in use today are separate from their driving motors — and the coupling flanges must be carefully aligned . . . and *kept* in alignment!

Here are other ways to extend sleeve life:

▶ Don't draw stuffing box gland too tightly . . . excessive pressure will wear shaft sleeves unduly.

▶ Never pump a liquid for which your pump was not designed. Sleeves are able to withstand corrosive effects of some but not necessarily all liquids. When in doubt over safety of changing pump application, check with your manufacturer.

▶ Generally a thin stream of liquid being pump serves as a water seal between packing and slee If it is dirty or abrasive, a separate supply of seal liquid should be obtained. And it should reach sleeve in a steady supply. Be careful water seal ing isn't plugged — or lantern ring displaced.

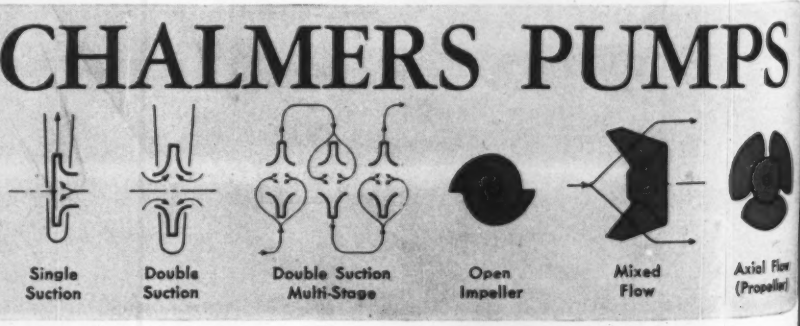
▶ Send for your *free* copy of Allis-Chalmers' "Ha book for Wartime Care of Centrifugal pump This valuable booklet applies to *all* makes of pum ALLIS-CHALMERS MFG. CO., MILWAUKEE 1, W

♪ *Tune in the Boston Symphony, Blue Network, every Sat. Eve.*

A 1708

ALLIS-CHALMERS PUMPS

Allis-Chalmers builds all types and variations of pumps shown at right. Capacities from 10 to 150,000 gpm—heads to 2500 lbs.



The Week In Engineering and Construction

GINEERING NEWS-RECORD • APRIL 13, 1944 • VOLUME 132 • NUMBER 15

A.R.B.A. asks increase n postwar road funds

erican Road Builders Association would increase federal high- y aid to $1,500,000,000 annually for at least three years follow- g the cessation of hostilities

increase of $500,000,000 per year the $1,000,000,000 now included in postwar highway bill before Con- was proposed to the Roads Com- e of the House by Charles M. am, engineer-director of the Amer- Road Builders Association, shortly re the committee recessed for er.

bill under consideration, HR-2426, ides that the one billion dollars e available to the states each year l be apportioned as follows: "One- for projects on the system of federal highways and one-half for projects urban areas and for secondary and der roads. The division within any e between projects within urban s and secondary or feeder road jects shall be made in the propor- which the populaiton within urban s and rural areas bears to the total ulation of the state." The half bil- dollars that the A.R.B.A. would to each year's apportionment, ac- ding to Mr. Upham, should be spent the Interregional Highway System VR, Jan. 27, Vol. p. 144), for arterial ds into and through cities, for grade arations and heavy construction on system.

Apportionment among states

On the question of how these funds uld be apportioned among the states, ch is one of the controversial issues being discussed before the House ds Committee, Mr. Upham expresses belief that the money for rural roads uld be apportioned according to the federal-aid formula, which gave al weight to population, area, and t-road mileage. As to funds to be ended in urban areas, he recom- nded that these be distributed on the is of the proportion that the popula- in all areas having a population above 10,000 bears to the total population of the country.

Matching federal funds

The bill under consideration proposes abandonment of the present 50-50 matching of federal funds by the states, increasing the federal share to 75 percent.

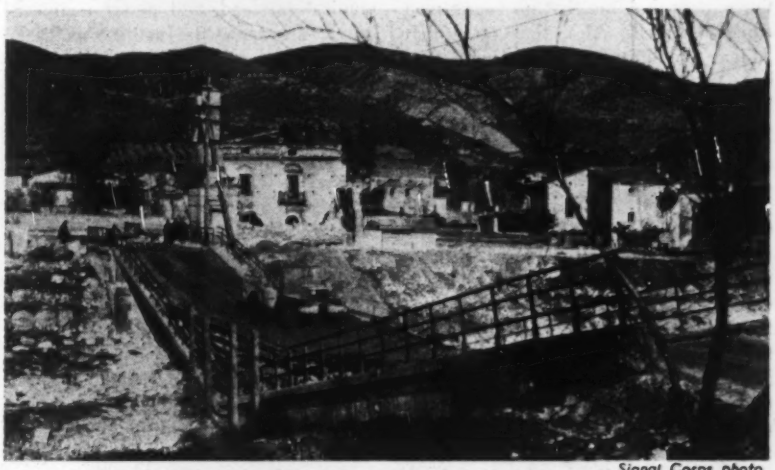
On this subject, Mr. Upham said that in normal times the federal contribution should be matched in equal amount by the state, but that as "time goes on and we have a better highway transportation system to serve the economic needs, the state portion could be increased and the federal portion could be reduced. Until this time comes, and during this war emergency when the states are not prepared for this proportion of matching, there is no question but that it is justified and economic for the federal share of this program to be 75 or 80 percent, and the state's matching with the smaller percentage for a period of two years, when the 50-50 matching arrangement should be resumed."

Roadbuilding equipment

W. A. Roberts, vice president of the Allis-Chalmers Manufacturing Co., and a director of the Manufacturers Division of the A.R.B.A., told the committee that manufacturers of construction equipment could easily meet any demand for roadbuilding equipment that might be made upon them under the proposed postwar program, declaring that with minor exceptions such manufacturers are faced with no reconversion problem. War production demands are from two to ten times greater for various kinds of equipment than the highest previous peacetime requirement.

Large quantities of construction equipment are on hand and will be available for initiating the postwar program, according to H. O. Penn, president of the H. O. Penn Co. and a

(*Continued on page 6*)



Signal Corps photo

Not worth the dynamite to blow it up

That German engineers are not always so proficient and thorough as they are claimed to be is evident from this view of some of their handiwork in Italy. Merely breaking the concrete girder at the middle of the span created little more than a minor road block for American engineers who just filled the valley with stones and earth and kept traffic rolling. Even though there should be a flood it is very probable that the crossing could be forded readily on this type of temporary construction.

FEA explores engineer training for rehabilitation work abroad

Foreign Economic Administration takes up with colleges plan for training engineers from here and abroad for rehabilitation work in the liberated lands of Europe and Asia.

A plan for training foreign and American engineers in American engineering schools so that they can participate in applying American methods to the rehabilitation of the liberated countries in Europe and Asia has been drafted by the Foreign Economic Administration and has been discussed with representatives of 15 engineering schools. The possibility of offering similar training to engineers from South American countries also is under consideration.

Plan still nebulous

The plan still is very nebulous for several reasons. First, the FEA is an emergency war agency, apparently without authority to set up or finance such an elaborate program as its engineering staff has laid out. Second, acceptance of students would have to be approved by the student exchange of the State Department, and probably by the Office of Education and the Department of Labor. None of these agencies has given the plan any consideration.

A further complication is the fact that no foreign students are immediately available and foreign governments have shown no inclination to sponsor students for such study. And as to students from this country, no government agency has shown any enthusiasm for the scheme, holding that no young men can be spared. Also, they state that American industry is in no condition to have war programs interrupted by taking on student-workers on a basis that would approximate apprenticeship.

Details of the plan

The plan was prepared by Edgar J. Gealy, head industrial engineer of the engineering staff of the FEA. His proposal is that foreign governments, in collaboration with a representative of the United States, shall select from 20 to 30 technical college graduates each. Further sponsorship of each student and his later employement in his own country, would be assumed by some national engineering association, industrial corporation or college of his homeland.

Total costs per student are estimated at $3,600, of which $1,200 would be for subsistance and $2,400 would be for education, including class and field instruction, texts and supplies, laboratory expenses, field transportation. Though FEA's outline of the plan suggests that national engineering associations, inductrial corporations or government agencies might be asked to provide scholarships for some of the United States students, no hint is given as to how foreign students would be financed. Such scholarships, for U. S. students, the outline states, might spring from a desire on the part of the government to develop foreign industrial counsellors.

Colleges considered

Colleges have been selected either because they are outstanding in some field of engineering study or because of their proximity to industries well adapted to offer opportunities for practical experience. The list is to be added to later.

Courses, which would cover an 18-month period, have been developed or are under preparation at the following institutions: Carnegie Institute of Technology (steel engineering); Colorado School of Mines (mining engineering); Illinois Institute of Technology (communication, food, and power engineering); Massachusetts Institute of Technology (food, fuel, and transportation); Northwestern University (transportation); Pennsylvania State College (chemical and fuel); Philadelphia; Textile Institute (textile); Purdue University (power and transportation); University of Detroit (fabricated products); University of Illinois (sanitary); University of North Carolina (administrative and textile); University of Michigan (chemical and hydraulic); University of Utah (geological); University of Wisconsin (food); and Union College (power engineering).

In addition to the advanced engineering courses listed, additional ones will be developed to meet special requirements of foreign countries.

No civil engineering courses listed. Except for power and hydraulic engineering and transportation courses largely relate to production processing.

Emphasis on social sciences

Great weight is to be given subjects classed under the social sciences, humanities, and economics. Included are such things as climatic and temperature influences, racial characteristics, national prejudices, social structure, religious and caste influences, native thinking patterns, family life, nationalistic traditions, work patterns, philosophy of life, government and politics, labor relations and unionism.

Orientation of students

In the plan for training foreign students, considerable emphasis is given to their orientation during study in the country. Not only is familiarity with the English language required, but it is stated in the FEA outline that living quarters are to be selected that will acquaint students with our mode of living, and with philosophies of life found in the United States.

• • •

Gen. Jas. A. O'Connor now at Fort Devens, Mass.

Brig. Gen. James A. O'Connor, the man who directed all the regiments of Army Engineers in building the 1600-mi. Alcan highway, is now on duty as commanding general of the Army Service Forces Unit Training Center at Ft. Devens, Mass. The 53-year-old general officer went there from Whitehorse, in Yukon Territory, where for 22 months he directed the construction of the highway.

A veteran Army man, he has served throughout the world as an engineering officer. Before taking on the Alaska job he was best known as the engineer who had charge of the tunnels and fortifications on Corregidor. A native of Bay City, Mich., his home is now in Los Angeles. He was graduated from West Point in 1907.

Gen. O'Connor not only had charge of constructing the Alcan highway, but also such correlary projects as the airports between Edmonton, Alberta, and Fairbanks, Alaska, and the narrow-gauge White Pass & Yukon railroad now under military operation.

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Delaware Aqueduct for New York's water supply goes into service

Storage reservoirs are not completed but part of flow from Rondout Creek is diverted into the 85-mile tunnel.

One element of New York City's new ater supply system—the 85-mile Dela- re Aqueduct—was placed in service April 5 when a 50 mgd. flow was erted from Rondout Creek into the ueduct. Eventually, when three stor- reservoirs are completed, the tunnel ll carry 540 mgd., thus augmenting esent supply sources (Croton and tskill) that now furnish the city with out a billion gallons of water daily.

In ceremonies conducted by the New York Board of Water Supply, Mayor F. H. La Guardia opened a sluice gate at the mouth of a short diversion tunnel leading from the stream to the aqueduct. The latter, which was completed about a year ago, is concrete lined and varies in diameter from 13.5 to 19.5 ft.

Throughout its 85-mile length the depth of the tunnel below ground surface is 310 to 1,550 ft. The conduit terminates at the Hill View reservoir at the northern boundary of the city.

Placing the aqueduct in service at this time was prompted in part by the desire to supplement existing supplies, the storage of which may not be up to normal because of lack of rainfall during the winter months.

Construction of the Rondout and Neversink reservoirs, which will form part of the new Delaware supply project, has been delayed by war restrictions on materials. These reservoirs will provide 170 mgd., which will be supplemented with 370 mgd. from the East Delaware reservoir.

Design and construction details of the entire project have been described in a series of ten articles, the last of which appeared in the Dec. 19, 1940 issue of *Engineering News-Record* (Vol. p. 822).

Architects to foster Soviet-U.S. friendship

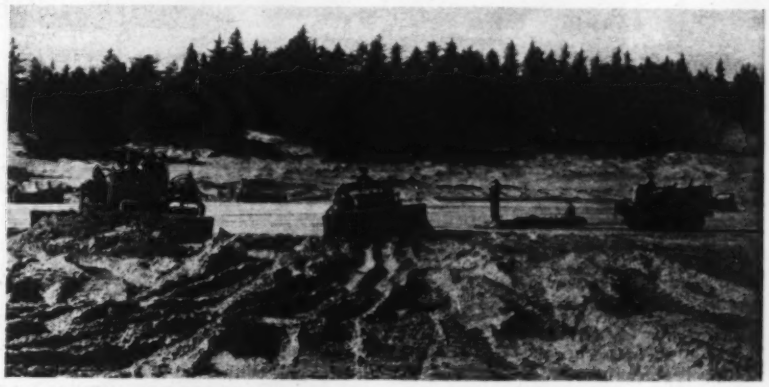
During the past winter an architects' mmittee was formed in New York der the auspices of the National uncil of American-Soviet Friendship. purpose is to bring the professions the United States and the Soviet ion closer together by developing an derstanding of each other's back- ound and present problems, thereby eating a basis for constructive coop- ation after the war.

The committee intends to be a me- um for an exchange of data on matters a general professional interest in h countries such as housing, com- nity planning, industrial building, w materials, building methods, and many problems of postwar recon- uction.

There is to be an interchange of data professional organizations and their ns, standards, and practices; on chitectural education and technical ining, leading eventually, according present plans, to exchange visits by chitects, engineers, technical person- and students.

An important part of the committee's rk is the preparation of traveling ibits on architectural and allied sub- ts for circulation in both countries. e committee has already started work two introductory survey exhibits, on American architecture for the iet Union, and one on Soviet archi- ture and planning for the United tes.

The committee is to function nation- and hopes also to develop regional committees. The chairman is Harvey ley Corbett. The committee at 232 dison Ave., New York 16, N. Y., comes suggestions and requests for rmation.



First steel-mat aircraft runway in Canada

On a remote island beach off northern British Columbia, Royal Canadian Air Force engineers and construction workers recently completed the first steel-mat aircraft runway in the Dominion.

The strip is 4,700 ft. long and 150 ft. wide, covered with 12 x 3-ft. interlocking steel-mat units laid directly upon the sand beach to form a surface capable of supporting medium-size bombers.

Thousands of logs and driftwood were cleared from the beach by bulldozer and hand labor. Final grading of the sand preparatory to laying of the mat surface was done with drags, as shown in the illustration at top. The grading covered an area about 5,000 ft. long and 300 ft. wide.

The project was completed in 13 days, from the setting up of a tent camp to the landing of the first aircraft, three days ahead of schedule. The operations were carried out under direction of Wing Commander J. C. Dumbrille, a former mining engineer in Northern Ontario gold fields, with the assistance of four officers, and a force totalling 284 men.

Fig. 1. Equipped with special erecting equipment, a heavy truck backs into position to unload the bridge pontons.

Special Army Truck Aids Ponton Bridging

Using special bridge erecting trucks, U. S. Army Combat Engineers can build in a few hours ponton bridges capable of carrying our heaviest mechanized equipment. In recent maneuvers the 22nd Armored Engineer Battalion built a 330-ft. crossing in 3 hr. and 2 min.

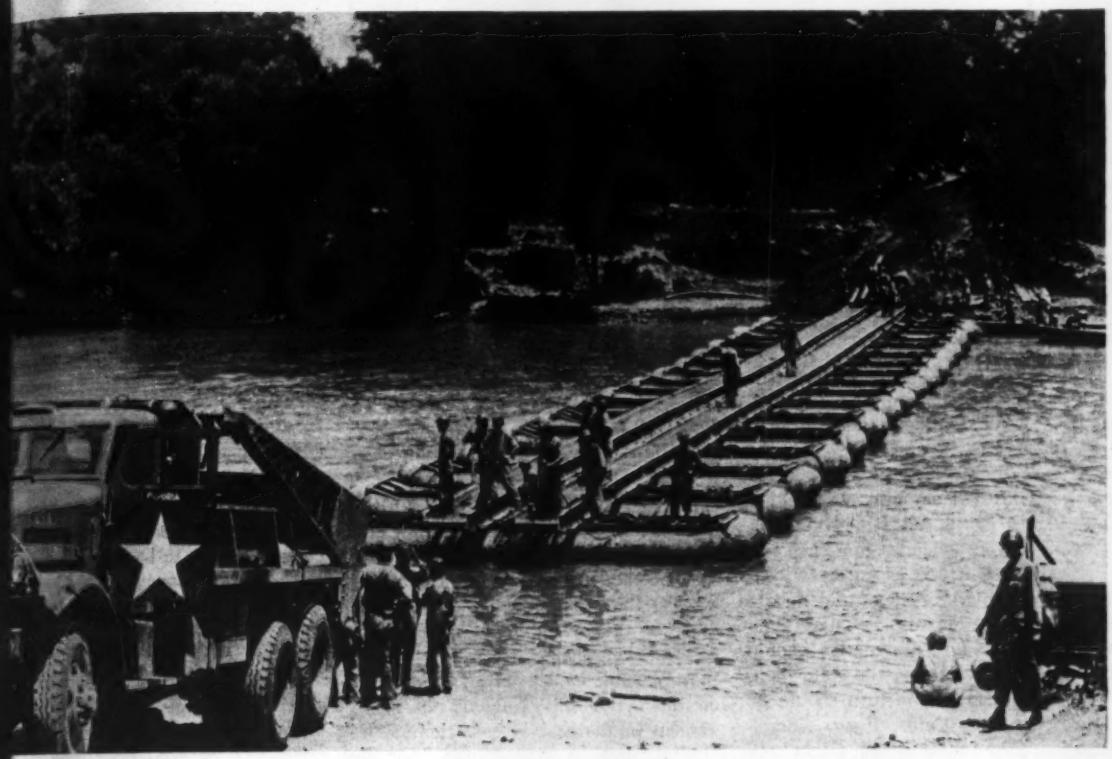
Such fast bridging is accomplished with the help of a new equipment carrier and erecting unit shown in the accompanying illustrations. The special steel carrier body and its 8,000-lb. pacity crane were built by The Heil Milwaukee, for mounting on a B way army truck. Each big truck ca pontons, steel saddles, and four 2 lb. treadways for 30 ft. of bridge. trucks are 31 ft. long and weigh 26 loaded.

The crane is 14 ft. long, hinged a base, and hydraulically contr Swinging from its traveling pos along the outsides of the body, it p up the heavy steel treadways, two time, and unloads and positions for securing to pontons.

Fig. 2. A pair of treadways 15 ft. long is lowered onto a ponton saddle 33 ft. long. This ponton is locked to two others to form a 45-ft. bridge section, which is then ferried across to other side.

Equipped with big winch

Another feature of the big t the 25,000-lb. double drum w mounted just behind the front bum While winches are standard equip on most large, mobile army units pulling the vehicle or other equip out of difficult spots, the one on the truck serves another important purp Sometimes it is necessary to pos treadways from a high bank or cliff point lower than that attainable the regular crane chains. The from the winch is then threaded thr a fairlead at the rear of the truck through a snatch block at the en the crane's load chains so that ea ment may be lowered far beyond normal range of the boom. This g expands the usefulness of the truck



3. Assembly of the bridge sections progresses outward from the far bank. This method of construction keeps the near clear for the assembly of new sections.

hen a fleet of the trucks arrives at idge site, the first truck backs into tion near the water's edge, and a on is taken out of its heavy canvas ring and unrolled to its full 33-ft. th ready for inflation. A large unt of air is needed, but a truck-nted compressor has the ponton to take to the water in 5 min. -headed air compartments keep the on afloat even under strafing at-s.

Crane unloads saddles

ext, the carrier moves close to the r's edge, and the hydraulic crane ads the steel saddles fitting snugly the ponton. These saddles, which secured by straps at 4-ft. intervals, the ponton rigidity and protect it bullets or flying shrapnel. Then crane unloads the perforated steel dways, which are 15 ft. long and pped with high guard rails along outside of their 2-ft. width. Two ons support a pair of treadways, ing a 15-ft. bridge section. Com-d ponton bridge sections are next ed and the overlapping treadways d together.

hen three sections—45 ft. of bridge ve been joined, they are ferried s the stream with an assault boat fastened on the opposite shore. An hibious jeep and a bulldozer usu-go along on the first trip so they can begin work on the road on the far side.

Thereafter, the engineer troops continue to assemble ponton sections and to ferry them across to join the original section. This method of construction leaves the near bank clear for the assembly of more sections.

Finishing touches include the installation of heavy anchors about 50 yd. upstream to brace the bridge against the river current.

Fig. 4. Loading piers and jetties for landing craft also may be built quickly with the new truck. This picture shows a pier under construction by American forces in the Mediterranean area.

A.R.B.A. seeks more funds for postwar roads

(*Continued from page* 1)

director of the Distributors Division of the A.R.B.A. Mr. Penn formerly was chief of the Used Equipment Section of the War Production Board. He expressed the view that many contractors would be in the market for a considerable quantity of new equipment once the postwar program gets under way.

Work in cities

Raleigh W. Gamble, superintendent of street construction and repair, Milwaukee, Wis., president of the Municipal Division of the A.R.B.A., urged a specific authorization of $250,000,000 per year for use on city streets that form a part of the federal-aid highway system. He recommended that each city designate such streets as are to be considered part of the system, and that to insure coordination with the state highway system such a designation should be subject to review by the state highway department and in turn should be approved by the Public Roads Administration. The initial system might well be limited, he said, to a maximum of 10 percent of the total street mileage of each city.

Mr. Gamble recommended that the money to be expended on city streets be apportioned to the state highway departments in the ratio that the population of all cities of 10,000 population or over in each state bears to the total population of all cities of such size in the United States. The state highway department of each state, in turn, would apportion funds to each city with a population of 10,000 or more in the ratio of the city's population to the total population of all such cities in the state.

A.A.A. favors change

Changes in the method of apportioning federal-aid highway funds among the states were proposed to the Roads Committee by the American Automobile Association. It recommended that 60 percent of the federal-aid highway funds appropriated for each of the first three postwar years should be used on the Interregional Highway System with due emphasis on its urban parts. These funds, the association's spokesman said, should be apportioned among the states as follows: 80 percent as each state's gasoline consumption for highway purposes for 1940 is to the total of such gasoline consumption for all states, and 20 percent in the same proportion that each state's mileage of the interregional system bears to the total of such mileage for all states.

The remaining 40 percent of the federal-aid highway funds, the A.A.A. said should be used on other portions of the primary or secondary federal-aid system as the state highway departments may elect, but with appropriate emphasis on urban parts or extension thereof. These funds should be apportioned among the states as follows: one-half on population, one-fourth on area, and one-fourth on post-road mileage.

Sharing highway costs

On the question of state matching of federal-aid funds, the A.A.A. representatives said that they recognize that the 50-50 sharing of costs "has been tested and proven sound over a long period of years, and any deviation from it now or later must be weighed most carefully. We also recognize that the fiscal condition of the states is now and will after the war be much easier than that of the United States. Hence we suggest that while the national importance of the interregional system may warrant a provision that the federal share payable on account of any project on the system may include up to 75 percent of the cost of construction, including cost of right-of-way, yet the federal share payable on account of any project on other portions of the primary or secondary federal-aid system should not exceed 50 percent of the construction cost, not including right-of-way, with the customary allowance to states on account of unappropriated and unreserved public lands.

"We believe that modification of the matching formula for the interregional system is fully justified for reasons already advanced. To these should be added the fact that the system includes only 1 percent of the highway mileage of the country as compared with some 17 percent authorized on the two federal-aid systems, with that 1 percent, however, broadly serving 70 percent of the population. For similar reasons we believe that federal-aid money should be available when matched for purchase of right-of-way on the interregional system, but not elsewhere."

States tell of needs

The specific needs of two southern states in the way of postwar highways were reported to the congressional committees by representatives of those states. They are as follows:

Mississippi—One of the last of the states to inaugurate a major highway construction program, Mississippi launched its first program of any consequence in 1936. At that time there were less than 1,000 mi. of paved roads in the state. By 1940, however, some $90 million worth of highways had been completed on the state highway system. As a result, the state's main highway or trunk lines are of relatively new construction, employing modern engineering in location, alignment and construction.

Mississippi's proposed postwar program as submitted to the Public Roads Administration calls for an expenditure of $138,600,000, of which $24,200,000 is earmarked for construction in and around metropolitan areas.

A breakdown of this program discloses that $74,500,000 will be spent improving 1,310 mi. of primary highways and $64,100,000 on 1,250 mi. of secondary roads. The state has virtually $15 million worth of construction ready to go and plans for another $9 million well under way.

The report on Mississippi's postwar highway needs and proposed construction was presented to the congressional committees by E. D. Kenna, director of the highway department.

Kentucky—It will require $179 million to bring Kentucky's state highway system up to present day standards, reported T. H. Cutler, state highway engineer. Of this amount, $79,500,000 is needed on primary highways, $74,000,000 on secondary and feeder roads and $25,000,000 on urban highways.

Since it is apparent, however, that no such large amount of funds will be made available in the near future, Kentucky has concentrated on a program covering only the most urgent projects. This program could be completed in 3 to 5 years. On it are listed 50 projects, totaling 3,000 mi. of road and bridge construction at an estimated cost of $115,700,000 including right-of-way. It is planned to select projects from this list, in the order of their greatest urgency, to utilize any amount of funds that are made available.

Hearings to be continued

Hearings on HR-2426 are to be resumed after Congress reassembles on April 12 when Mr. Upham will complete the presentation of the A.R.B.A. Thomas H. MacDonald, commissioner of public roads, is expected to be the final witness.

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U. S. to send delegates to Lima road conference

The United States has been invited to send delegates to the fifth Inter-American road conference to be held July 15-24 at Lima, Peru. The United States will participate as it did in previous conferences held in 1925 at Buenos Aires, in 1929 at Rio de Janiero, in 1939 at Santiago, and in 1941 at Mexico City.

Deepening of lower Mississippi recommended by river commission

12-ft. channel instead of the present 9-ft. one between Cairo, ., and Baton Rouge, La., to aid flood control and navigation, is roposed in report to Congress.

ecommendations for deepening the issippi River to 12 ft. between o, Ill., and Baton Rouge, La., are recent report to Congress by the issippi River Commission, accord- to Brig. Gen. Max C. Tyler, presi- of the commission. The present nel depth is 9 ft.

reparation of the report was author- by the House Committee on Flood trol and the Senate Committee on merce, which requested the Chief Engineers to determine the advisa- of deepening the navigable chan- for flood control and navigation.

he commission's report recom- ded 230 mi. of new revetment be- n Cairo and Baton Rouge, in addi- to the 97.5 mi. already in place. length of channel between the two ts is 737 mi. Several years would be uired to do the work. It would cost 0,000,000 at current prices on chan- improvement and stabilization.

The war has re-emphasized the river's e as a transportation medium, said eral Tyler, pointing out that more 1,000 ocean-going vessels have made at inland shipyards and fer- to the sea through the Mississippi its tributaries. This has made pos- e the use of manpower and facilities hipbuilding otherwise not available. he river, now carrying over 9,000,000 of freight annually, would handle stly increased amount faster and e efficiently when the proposed work inished. Some barge line operators e estimated that the deeper channel ld result in 25 percent more operat- efficiency.

The report covers many problems ch have bothered Army Engineers ng to control the stream. The build- of levees has confined floodwaters relatively narrow floodways, thereby reasing stages and requiring massive ees for adequate protection. Also, the ndering of the river is a constant eat to the integrity of this levee sys- , according to the report.

Would stop meandering

The construction of cutoffs in recent rs has resulted not only in shortening river's length, but has reduced flood ghts in certain reaches. The report intains that the proposed channel- epening program is necessary to hold the river and to retain the benefits from these cutoffs.

Results of a series of studies conducted at the U. S. Waterways Experiment Station, Vicksburg, Miss., relating to the problem of river meandering and protection of the existing levee system are contained in the report.

Combining these experimental results with its years of observing the river, the commission concluded that properly located bank stabilization works in combination with dredging can improve both the low-water navigation channel and the flood-carrying capacity of the river. It also follows that the Mississippi will regain the length by which it has been shortened (by cutoffs) unless its present alignment is fixed by stabilization works. If it is allowed to regain its former length, the lowering of flood heights which has been obtained will be lost, said the report.

Prior to completion of the report, navigation interests advised the commission, in open hearings, of an urgent desire for the increased channel depth. They pointed out that the 3-ft. additional depth would reduce resistance to towing, increase speed, particularly upstream, and increase safety of navigation—all with the same power. Navigation interests also favored the bank stabilization program for ease and safety of navigation.

Other groups in accord

Levee boards in the valley joined with the Mississippi Delta Council in favoring the plan. These groups, primarily concerned with flood control, desire greater stabilization of the river channels in order to retain the greater flood-carrying capacity obtained in recent years by realignment of the river. The dredging and bank stabilization also would act to increase this flood-carrying capacity in many localities.

The cities of Memphis and Vicksburg appealed to the commission for stabilization of the river channel in order that their harbors might have permanency of location, plan and depth. Furthermore, such improvements would permit greater development of river sites by industry, with assurance that caving banks will not destroy them nor will they be left a long distance from the navigation channel by major change in the river's course resulting from floods.

In conclusion, the commission's report declared:

"The great investment made by the government and the local people in the levee system, the constantly increasing population and property values protected by the levees, and the benefits accruing to the country as a whole from the navigation of the river both in war and in peace justify the further expenditures required."

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Levee district chief wins Army promotion

William H. Holland, chief of the levee section, Vicksburg District, Army Corps of Engineers, was promoted to lieutenant colonel on March 3, according to Lt. Col. R. W. Sauer, district engineer. A civil engineering graduate of Mississippi State College in 1925, Col. Holland has been closely identified with flood control and levee construction work along the Mississippi for the past 18 years. He was made chief of the levee section at Vicksburg in 1930.

Early in 1942, Col. Holland, who held a commission in the U. S. Army Reserve, was called to active duty as captain in the army engineers. His promotion to major followed later the same year.

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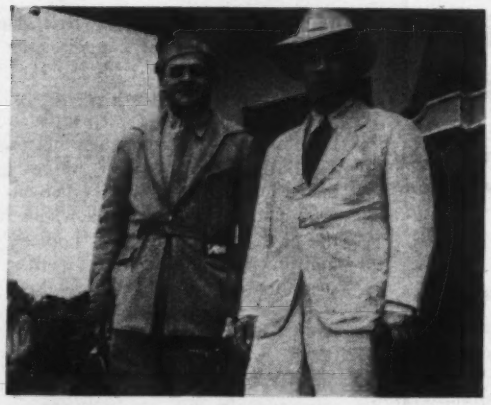
California and Nevada seek flood control

Report on a California and Nevada $17,000,000 postwar project for flood control, hydro electric power development and irrigation is scheduled to be submitted to the U. S. Army Corps of Engineers on April 15 for transmittal to Congress which authorized the survey on Lake Tahoe water.

Col. R. C. Hunter, Sacramento, Calif., Army engineer, recently outlined the plan which calls for construction of dams and reservoirs on the Truckee, Carson and Walker rivers at a cost of $11,720,000, plus channel work and hydro-electric development.

Development would be made possible through a reduction of Lake Tahoe's water level and change in water storage. The annual reduction in flood damages would be $150,000, the report estimates, and agricultural income would be increased about $80,000 annually.

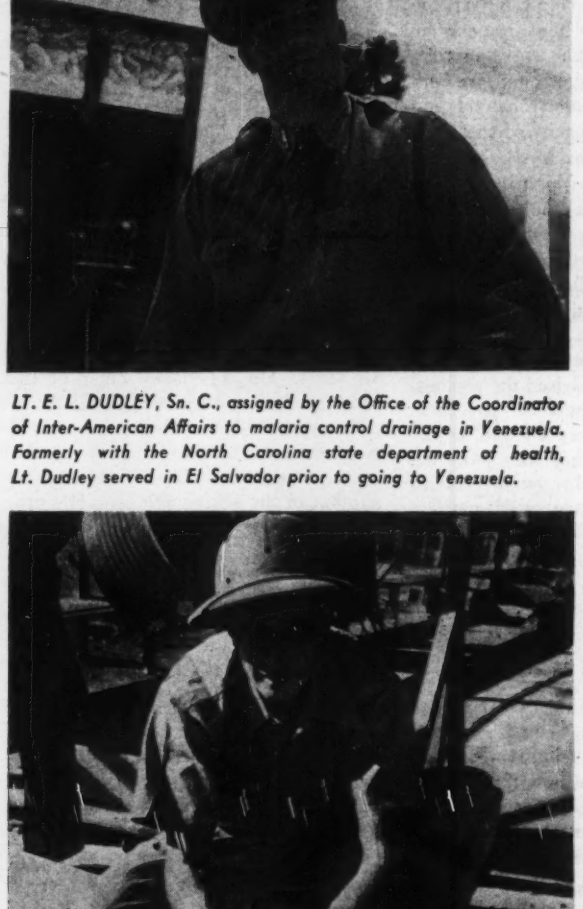
MEN AT WORK In *Latin America*



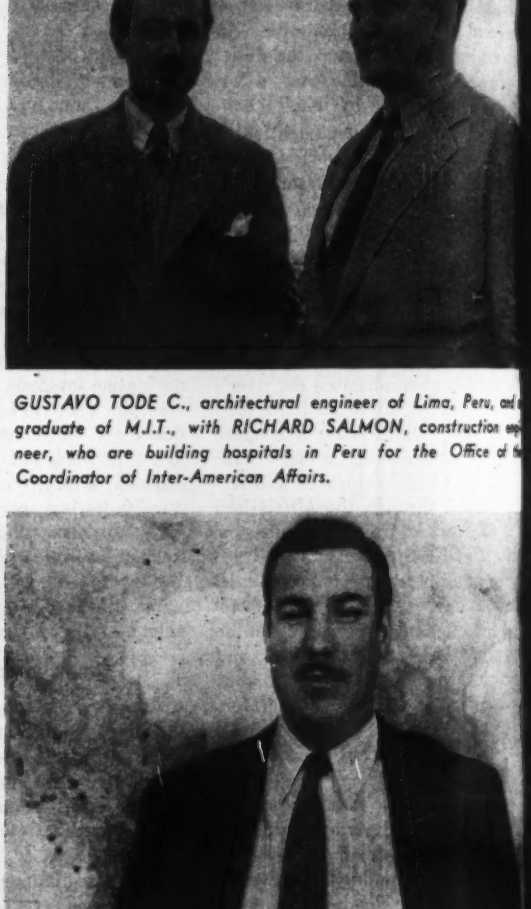
At home in almost every country of South America is ED HOPKINS, (left) engineer of the Pan-American Sanitary Bureau, shown here with DR. ESPINOSA-SMITH, chief of malaria control in Ecuador. Mr. Hopkins has been decorated by the Chilean government for his services in connection with earthquake disaster relief measures.

LT. E. L. DUDLEY, Sn. C., assigned by the Office of the Coordinator of Inter-American Affairs to malaria control drainage in Venezuela. Formerly with the North Carolina state department of health, Lt. Dudley served in El Salvador prior to going to Venezuela.

GUSTAVO TODE C., architectural engineer of Lima, Peru, and graduate of M.I.T., with RICHARD SALMON, construction engineer, who are building hospitals in Peru for the Office of the Coordinator of Inter-American Affairs.



RALPH J. HOWARD, chief of the American sanitary mission assigned to Haiti. Formerly associated with the Georgia state department of health, Mr. Howard is directing construction of drainage works, water supply and public market facilities under the Office of the Coordinator of Inter-American Affairs.



LUIS MANTILLA F., chief of the department of sanitary engineering, Ministry of Health, Lima, Peru. Mr. Mantilla, who has taken graduate work at both Harvard and the University of North Carolina, organized the department of which he is head, in November, 1941.

Recalled from retirement to build barges, Edward H. Connor looks to the postwar era

The way in which men of all ages in construction industry have turned e from their normal pursuits to aid the war effort is peculiarly exemplid by Edward H. Connor, former chief gineer and vice president of the Misri Valley Bridge & Iron Works of venworth, Kan., who returned to ac- work after having retired to the ition of consulting engineer for the pany in 1937. The job that called Connor from retirement, and on ch he still is actively engaged, was a ge Navy contract for the construction steel landing barges.

An expert on bridges

Mr. Connor was born in Alton, Ill., in 4. His father was a manufacturer of machinery. After graduating from shington University, in St. Louis, ng Connor's first assignment was as istant engineer on the Ohio River dge at Cairo, Ill., for the Illinois Cen- R.R. In 1899 he joined the staff of Missouri Valley Bridge & Iron Works an assistant engineer, becoming chief gineer and vice president in 1904. at position he held until his retirent in 1937 and as such had a major rt in the many bridge projects under- ken by the company.

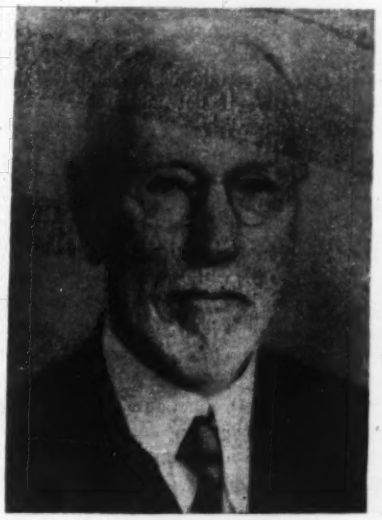
When interviewed recently on his nding-barge building project, Mr. Con- said: "Designing and building idges and sinking caissons, which has en my work for nearly 50 years, is not actly training for the large scale proction of steel landing barges. And yet suppose the experience and training I ve had in bridge building lends someing to the better and quicker delivery our contract fulfillment. At any rate, am doing the best job I know how to and will continue so long as there a need."

Thinking of the postwar era

But Mr. Connor is not devoting all his oughts to immediate problems; he is oing some thinking about postwar probms as well. On these he said: "It seems me quite evident that as soon as this ar is over, we are going to have a huge rplus of ships, barges and in fact boats all types. We are going to have a erious temporary shortage of tractors, rucks, automobiles and all machines of hat type.

"Regardless of early 1944 predictions y some, I think it is now a pretty well stablished fact that for some time after he peace, the demand for steel is going o be much greater than the supply. This means that engineers and contractors must make their plans now in order that the least new steel does the most work.

"Such types of steel construction as will allow more life, more work, more finished products of the longest lasting type, should be given priority after the war is over, just as now when we are



Edward H. Connor

scraping the bottom for sufficient stocks to carry on even with war contracts.

"This policy of early planning to make existing steel last for the duration and carry industry into the early postwar years, if consistently followed, will result in substantially alleviating the steel shortage situation. It is a program which should be started and carried through by those who advise and counsel industry.

"It is my hope that our government will allow the industrialists to make their own postwar plans for conversion. These men, many of them having had experience during World War I, gained production experience between the two wars, and have gone through the present period of wartime production with a creditable record of achievement.

"Government agencies and bureaus might well furnish needed facts and compile reports, but certainly the government should keep hands off business and allow our thousands of trained experts to make their own conversion plans, employ their own men and put peace-time industrial operations on a sound basis just as these same men handled the conversion from peace to war to meet the needs of World War II."

In January the A.S.C.E. conferred honorary membership on Mr. Connor.

Low rainfall threatens London water shortage

London may have a water shortage this summer because of exceptionally light rainfall in recent months, Henry Berry, chairman of the Metropolitan Water Board, warned March 10, according to a dispatch to the New York *Herald-Tribune*.

Appealing to the population for strict economy, he said that the present flow of the River Thames, London's main source of supply, is less than one-third of the average for this period.

A reduction of 20 percent of the prewar total water consumption of 300,000,000 gallons for 7,250,000 people will have to be realized for the estimated supply to go round, Berry declared.

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Colorado River water for San Diego, Calif.

Field surveys are in progress by U. S. Bureau of Reclamation crews on the route for San Diego's proposed pipeline to carry Colorado River water from the All-American canal to the city.

Field work on an alternate route from the west portal of San Jacinto tunnel to San Vicente reservoir is completed, according to Richard Ward, senior engineer for the bureau.

Upon completion of the surveys to the canal the city council will have comparative costs on two routes.

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Increase in truck loads proposed in Kentucky

Legislation limiting the weight and length of transportation units on Kentucky's highways, introduced recently in the state legislature, is designed to raise the existing legal load limits in that state. The bill would permit a maximum 18,000-lb. axle load, 40,000-lb. gross weight of vehicle, 12½ ft. height, 35-ft. overall length for single truck units and a 45-ft. length for tractor semi-trailers.

These loading limitations, however, will apply only to transportation on main rural roads and highways, according to a special provision of the bill. On other than main roads, the limits would remain 13,000-lb. axle load and 28,000-lb. gross weight. Kentucky's legal limits for trucks now are among the lowest in this country. The new legislation measure was prepared by the Kentucky Motor Truck Association and the Kentucky Petroleum Industries Committee after consultation with the state highway commission.

War and postwar housing news

More than one-half of the 58,000 migrant war workers at Vancouver, Wash., hope to remain in that community and build their own homes there, the Vancouver Housing authority has learned through a survey.

The authority determined through questioning a cross-section of the 9,000 families living in war housing projects that 62 percent are satisfied with their present jobs and that 60 percent intend to remain in Vancouver, while 70 percent hope to own their own homes—8 percent in the city, 30 percent in suburbs, 31 percent on small farms, 2 percent on large farms, while 29 percent are undecided as to location.

These findings agree with those of the National Association of Housing Officials, which show that the average war migrant hopes to buy or build a home in the suburbs costing $3,000 to $4,000.

The National Housing Agency's recently announced policy concerning the disposition of publicly financed war housing applies only to demountable and temporary structures, the agency has announced. Such structures can be moved, sold or leased, transferred or reserved, as the case may be, in order to meet either public or private needs for war housing or to meet non-residential needs in connection with the war.

Though they can be transferred or sold for non-war use, this is only for purposes other than residential. Structures can also be demolished and the materials and equipment salvaged.

Though usable trailers and portable shelter units are now being held for "stopgap" purposes, they, too, can be sold after there is no further need for them. If their condition makes further use impracticable, they can be sold at once for salvage. All disposition of structures will be handled through regional offices of the Federal Public Housing Authority.

Recent NHA legislation makes it mandatory that all temporary housing be removed within two years after the war ends, except where NHA and a community agree that the need for a specific structure continues to exist. In such cases, a report must be made to Congress.

A housing survey is under way in the Portland, Ore., area. It is being conducted by the Portland Home Builders' Association with a view to proving that private enterprise can meet the demand expected to arise as the war in the Pacific gains momentum.

Government officials have stated that, so far as the Pacific Northwest is concerned, the need will be greatest in Portland. Said L. C. Simms, president of the association:

"The Izac naval subcommittee brought out the fact that Portland-Vancouver would need possibly 100,000 more workers on docks, in terminals and freight yards. Some of these may come from local shipyards, but many others probably will be in-migrants needing housing.

"If we wish more private housing priorities allocated in this area we must offer proof to the government that private enterprise can do the job as quickly and efficiently—if not more so—than federal agencies."

Contractors throughout Oregon and southeastern Washington are asked to submit estimates of the number of dwelling units they can build in a 90-day period, the amount of equipment they have on hand to work with, their financial resources, the labor available, and the need for any specified type of sub-contractor.

A new War Production Board order, P-55-C, jointly announced by WPB and the National Housing Agency, provides for blanket authority for construction of all war and non-war housing, without application to WPB for specific authorization. The new order became effective March 1. It also removes restrictions on a number of construction materials. At the same time WPB announced that Directive No. 2 to Controlled Materials Plan Regulation No. 6 no longer applies, since the new order now governs.

Under the latter, applications approved by FHA constitute authority to begin construction and carry allotment symbols for controlled materials. They also assign a preference rating of AA-3 for all materials and products permitted by Schedule I, which comprises the War Housing Critical List and which imposes certain material limitations for approved construction. Schedule II, which constitutes War Housing Construction Standards, imposes limitations on the size of buildings and other restrictions.

Application for authority to construct, and for materials, will continue to be made on WPB Form 2896, as modified. In reference to controlled materials, the symbol H-1 on an approved application will entitle the builder to materials required for war housing, and S-2 for non-war housing. Applications will continue to be filed with FHA, as previously.

Release of building material for the construction in Kansas City and Jackson County, Mo., of 1,072 housing units for war workers at a cost of between five and six million dollars was received from Washington on March 10.

The huge project was unexpectedly put into motion by the Navy and Army air forces in their drive to peak-staff the Pratt & Whitney aircraft engine plant, a key producer of aerial power.

The program calls for 526 multi-family units, twenty-four units in duplexes and 522 dwellings, all privately financed and constructed with the Federal Housing Administration insuring the loans.

Ten million bd. ft. of lumber and $100,000 in bath tubs and plumbing have been made available, according to word received from the War Production Board at Washington by Lieut. John W. Kendall, assistant Navy Bureau of Aeronautics representative at the engine plant.

Federal housing executives have stopped work on two war villages at Allentown and Birdsboro, Pa., and have followed this order with another terminating builders' contracts for the 420 units involved.

With these houses left in an unfinished state, some with the roofs on, additional projects are being closed, more previously projected housing has been canceled, and other prefabricated units only recently completed are scheduled to be torn down for use elsewhere.

The Allentown contract covered 260 one-story and two-story frame houses, and was being handled by the Rubin Construction Corp. of New York, on a bid of $732,850. It was reported to be about "one-third completed."

The Birdsboro houses, comprising 160 units of similar type, were being erected by the Del Val Construction Corp. of Scarsdale, N. Y., on a bid of $439,083.

Hundreds of other housing units have been closed at Niagara Falls, Buffalo, Mineville, Massena and Geneva, N. Y., to help correct an overbuilt situation. Similar corrective measures have been put into effect in production centers of New Jersey and Pennsylvania.

In some sections the war housing has been opened to the general public. In other centers where vacancies are less troublesome, as in Schenectady, the bars have been lifted halfway to permit occupancy by families of servicemen as well as war-plant employees.

The right of final approval or denial of applications for residential construction has been turned over by the WPB to the NHA. WPB, however, will retain control over design and use of materials through the War Housing Critical List and the War Housing Construction Standards, consulting with NHA.

Mabee, of Indianapolis, retires from water utility

After 42 years of service, William C. Mabee, chief engineer of the Indianapolis Water Co., retired on April 1. His career with the company began with the construction of the new sand filters at the White River purification plant. In 1917 he became assistant engineer, and in 1928 he was made chief engineer.

During his four decades of activity, the Indianapolis Water Co., a private utility, expanded its plant pumping capacity from 50 to 215 mgd. Mr. Mabee was engaged on the design and construction of many expansion projects, including reservoirs and filtration facilities.

Mr. Mabee was the recipient of the American Water Works Association's John M. Diven medal in 1938 for his work on development of specifications for laying cast iron water mains. That same year he also received the George W. Fuller award in recognition of his services to the Indiana section of the Association.

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Mississippi opening earliest in 50 years

When the Coast Guard icebreaker Acorn blew for a landing at St. Paul, Minn., the last week in March, it was said to be the earliest spring arrival of a government boat at that port in more than 50 years. It marked the completion of the toughest ice-breaking job in the Mississippi in many years.

In her battle with ice on the Lake Pepin section of the river, near Red Wing, Minn., the Fern lost or damaged three rudders. Then while backing into jagged ice 2-ft. thick, a hole was stove in the stern. There was an electric welding unit aboard, but no metal. Sections of metal floor from the engine room proved the solution.

Water ballast was put into the compartments of the ice plow and the ship backed onto an ice ledge thus raising the stern. The welding job took seven hours. Cofferdams had to be built around the area to keep water from the welding.

Resumption of navigation on the Mississippi relieves the hard-pressed railroads of part of their burden of freight at this time.

Chili invests millions in steel production

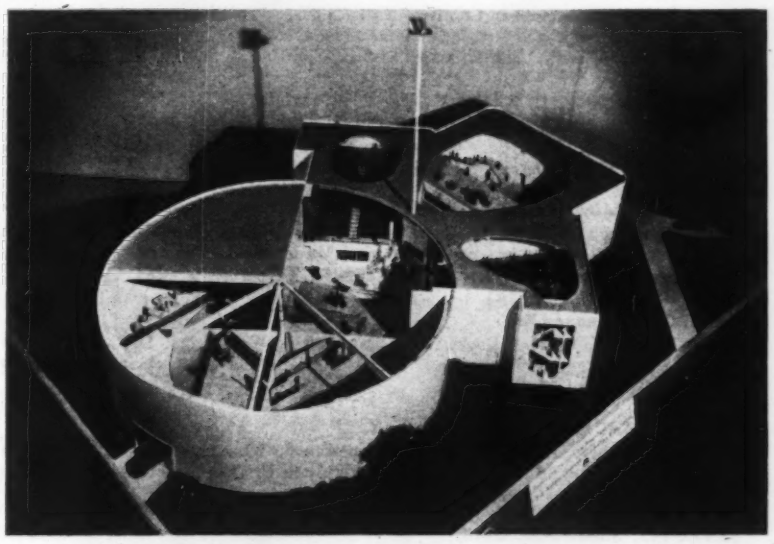
A plan to meet half of Chile's steel requirements with new domestic production in the Concepcion-Talcahuano area has been announced by Eugene S. Harman, consulting engineer of the Chilean Production Development Corp. Mr. Harman, now in the United States, estimates that Chile would invest $20,000,000 in the enterprise and says that half that sum would be applied to the purchase of machinery and equipment in the United States. A rolling mill costing $155,000 has already been bought from a United States firm, and larger additional purchases are on the way.

N. Y. State public works will be reorganized

Paving the way for reorganization of the New York State department of public works, Gov. Dewey last week signed a legislative bill that eliminates from the law specific reference to divisions within the department.

The new plan would provide for an overall division of administration, and two operating divisions — one for construction and one for maintenance.

Also provided in the new law is expressed permission for the public works department to hire consultants on work requiring the aid of a specialist. Heretofore, there were restrictions on this.



Postwar design for television broadcasting

In conjunction with an announcement last week by the General Electric Co., that it has postwar orders to deliver complete 40 watt television stations to the New York Daily News and the Chicago Tribune, is planning "two-way" television itself between New York and Schenectady and will be ready to serve a big postwar television industry, The Austin Co. revealed a model of a proposed television broadcasting building, based on designs made by its architects and engineers after a study of facilities and experiences at G-E's television station, WRGB, Schenectady. The building involves a new concept of studio layout in which the use of a turntable stage makes it possible to accommodate rapid changes of scene and audience without duplication of television equipment.

As shown in this picture of a model, separate audience seating areas, each accommodating several hundred persons, are provided on either side of a single broadcasting control room, and overlook one quadrant of the revolving stage from which all productions are to be broadcast. Sound resistant curtains across the front of each seating area make it possible to use the two sides alternately for alternate programs, or jointly when desired.

Cameras are mounted on cantilever arms supported by columns that also are a part of the welded rigid frames that carry the circular roof. Illumination is based upon the use of water-cooled mercury vapor lamps operated by remote controls. Backstage areas around the revolving stage are available for construction of sets and for storage, while offices, camera rooms and other auxiliary facilities are provided on the first floor, below the audience seating areas and the control room. A lofty lobby and exhibition hall extends across the entrance facade.

The design was developed by J. K. Gannett of New York, vice president and director of engineering of The Austin Co. in collaboration with Robert Smith, Jr., architect, and Brown W. Saveland, electrical engineer, of the company's research staff.

JOBS OF THE WEEK

AIRPORT PAVING, Newburgh, N. Y.

U. S. Engineers, New York, N. Y., have awarded a contract for airport paving to L. G. DeFelise, North Haven, Conn., at $1,169,000.

BUILDINGS, Frederick, Md.

U. S. Engineers, Washington, D. C., awarded a contract for additional buildings and utilities to H. K. Ferguson Co., Cleveland, O. The estimated cost is $3,000,000.

HOUSING, Marietta, Ga.

Public Housing Authority, Atlanta, Ga., has awarded a contract for the construction of 500 family dwelling units to John A. Johnson, Brooklyn, N. Y. at $995,696. Abreu & Robeson and R. R. Nash, Atlanta, are the architects. Defense Plant Corp. will finance.

PLANT TO MANUFACTURE RAYON CORD, Scottsville, Pa.

United States Rubber Co., New York, N. Y., awarded a contract for the construction of a plant to manufacture rayon cord to Daniel Construction Co., Greenville, S. C. The estimated cost is $3,000,000.

AIRPORT, Aultman, O.

Civil Aeronautic Administration, Chicago, Ill., received the lowest bid from Lewis & Frisinger Co., Ann Arbor, Mich., and from Schwaderer & Co. and Porath & Son, Detroit, Mich. at $1,675,537.

COVER STORAGE, Barstow, Calif.

Bureau of Yards & Docks, Navy Department, Washington, D. C. awarded a contract for additional covered storage, Marine Corps Depot to William Simpson Construction Co., Los Angeles, at $840,390.

BARRACKS, Oceana, Va.

Bureau of Yards & Docks, Navy Department, Washington, D. C., awarded a contract for the construction of barracks, to Virginia Engineering Co., Newport News, Va., at $794,000.

AVIATION FACILITIES, Miramar, Calif.

Bureau of Yards & Docks, Navy Department, Washington, D. C., awarded a contract to build aviation facilities to Winston Brothers, Los Angeles, Calif., at $1,727,000.

BARRACKS, Shoemaker, Calif.

Guy F. Atkinson, San Francisco, Calif., was the lowest bidder for the construction of additional receiving barracks at Camp Parks, Alameda County, at $1,184,080.

RAILROADS, Newark, Del.

U. S. Engineers, Philadelphia, Pa., will construct railroads, roads, earth fill track barricades, drainage, facilities and incidental work for 200 car storage yard. The contract has been awarded to Buffalo Gravel Corp., Camp Hill, Pa., at $883,375.

IRRIGATION PROJECTS, Delicias, Chihuahua, Mexico

State of Chihuahua, Chihuahua, will construct by its own forces irrigation projects near here. The estimated cost is $600,000.

AIRFIELD BUILDINGS, Langley Field, Va.

Civil Aeronautics Administration, Washington, D. C. received the lowest bid for heating plant in West Area, Langley Field, from Rust Engineering Co., Portsmouth, at $949,406; constructing an electronics laboratory from F. D. Rice Co., Inc., New York, N. Y., at $539,139; wind tunnel laboratory from Virginia Engineering Co., Newport News at $455,200; aircraft loads laboratory from same contractor at $238,730. Giffels & Vallet, Norfolk, Va. and Detroit, Mich. are the engineers.

BARRACKS FOR SPARS, Washington, D. C.

Jeffress-Dyer, Inc., Washington, D. C., has been awarded a contract for barracks for Spars, U. S. Coast Guard, by Public Buildings Administration, Washington, D. C., at $731,191.

Note—Additional bidding and contract news on many projects large and small appear in the Construction News section beginning on page 14.

George A. Orrok power authority, dies

George A. Orrok, consulting engineer, New York, died at his home in Riverside, Conn., April 6, age 77. Though long past the normal retirement age, Mr. Orrok had continued active until a short time before his death, recently having participated in war work as a partner in the architect engineer organization of Binger-O'Connor-Orrok.

Mr. Orrok devoted the greater part of his engineering career to the design and construction of power stations. After three years of study at Massachusetts Institute of Technology, he spent the ten years 1888-1898 on a wide variety of engineering work and some teaching. In 1898, he joined the staff of the New York Edison Co. as mechanical engineer and at the same time became associated with Thomas E. Murray as assistant engineer on power work he was doing for the Brady interests. Mr. Orrok participated in the design and construction of power stations at Dayton, Ohio, and at Utica and Albany, N. Y. He also had a part in work on the original No. 1 and No. 2 Waterside stations of the New York Edison Co., the Williamsburg and Sherman Creek plants at New York and the Hales Bar hydro-electric plant in Tennessee. Mr. Orrok was named consulting engineer of the New York Edison Co. in 1918. In 1928 he went into private practice in New York.

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Baltimore consultants take in new partners

The consulting engineering firm of Whitman, Requardt & Smith, Baltimore, has been reorganized under the name of Whitman, Requardt and Associates, admitting to partnership Richard F. Graef, Norman D. Kenney, Stewart F. Robertson, A. Russell Vollmer, Roy H. Ritter and Theodore W. Hacker.

Benjamin L. Smith will take over the Albany office of the old firm and will continue private engineering practice under the firm name of Whitman and Smith with Ezra B. Whitman as a limited partner.

Ezra B. Whitman, Gustav J. Requardt and Benjamin L. Smith began practice of engineering under the old firm name in 1915. Of the new firm members, Mr. Graef joined the firm in 1928 on design of the new Albany water supply. Messrs. Kenney, Vollmer, Robertson and Ritter have been with the firm since 1925, and Mr. Hacker since 1918. He served with the Rockefeller Foundation as engineer of sanitation in the old kingdom of Siam from 1931 to 1934.

OBITUARY

William Gerig, 78, former head engineer in the Office of the Chief of Engineers, U. S. Army, died in Arkadelphia, Ark., on April 3. Mr. Gerig had been consulting engineer on the New York Barge Canal, district engineer in charge of construction of the Gatun Dam at the Panama Canal, and engineer in charge of the Anchorage division of the Alaskan Railroad. He served successively as assistant engineer, associate engineer, senior engineer and head civilian engineer in the Washington office of the Corps of Engineers.

Louis F. Schroeder, 70, a prominent contractor of Fond du Lac, Wis., until his retirement died March 23.

David C. Will, a civil engineer and surveyor, died at Great Neck, N. Y., Mar. 30. He conducted his own practice for 38 years, and was active in the realty development of Great Neck and adjacent communities.

Adrien Plamondon, 59, Montreal engineer, died April 1. He had been an assistant engineer of the hydrographic survey of the St. Lawrence River, and founded his own business in 1920. He built several hydro-electric and filtration plants.

Henry J. Langworthy, 74, building commissioner for New York City, 1933-38, died recently.

George Butler, 79, who made the first survey for Miami Beach, Fla., in 1896, and who was the founder of Palm Beach County, and afterwards its engineer, died at Pompano, Fla., April 1.

Frank M. Johnson, 71, of Denver, Colo., died Mar. 27. Mr. Johnson after having graduated from the Corcoran Scientific School, went with the U. S. Geological Survey, later becoming examiner. In 1903, he served with the Fish mission to select a site and build the Assouan Dam on the Nile. In 1905, began private engineering practice in Cheyenne, Wyo. Five years later became supervisor of surveys for the Department of the Interior.

Charles W. Taggart, 63, road builder, contractor of Cody, Wyo., died recently in Oakland, Calif.

Francis A. Sparks, 74, died Mar. 16 in Denver, Col. He was widely known in the West in engineering circles, having been active for many years in association work. He was engineer for the Public Service Co. of Colorado for many years until he retired three years ago.

William Banks, 64, general contractor at Durant, Ia., for the past 40 years died recently.

Wm. Mosley Archer, 62, superintendent of the Carolina & Northwestern R.R., at Hickory, N. C., died Mar. 20. He had retired on Mar. 1 after 46 years of continuous service.

Elisha James White, 73, construction and marine engineer of New York City, died at Dallas, Tex., Mar. 8. A native Texan, Mr. White had engaged in construction projects in Mexico, South America, and Europe.

Frank Palmerton, 84, building contractor of Houston, Tex., died Mar. 9. A native of Granville, Ohio. Mr. Palmerton went to Houston in 1883, and built many buildings there.

Lloyd C. Adley, 48, former chief engineer of the Pennsylvania General State Authority and latterly employed by the H. A. Kuljian Co., Philadelphia, died Mar. 23.

John A. Adams, 78, contractor and builder of Gainesville, Fla., died Mar. 23.

CONTRACTS AND CAPITAL

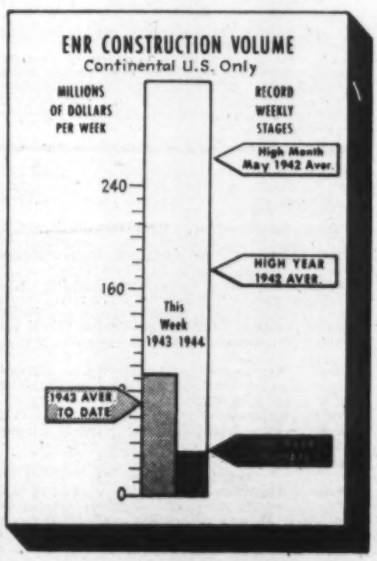
CIVIL ENGINEERING construction volume in continental U. S. totals $32,915,000 for the week. This volume, not including the construction by military engineers abroad, American contracts outside the country, and shipbuilding, is 3 percent lower than a week ago and 65 percent below the total for the corresponding 1943 week.

Public construction tops the preceding week by 12 percent, but is 65 percent under last year. Private work is 53 and 67 percent lower, respectively, than a week ago and a year ago.

The current week's construction brings 1944 volume to $517,000,000 for the fifteen-week period, a decrease of 52 percent from the $1,087,844,000 reported in 1943. Private construction, $109,881,000, is 8 percent below the 1943 period, and public construction, $407,119,000, is down 58 percent as a result of the 60 percent drop in federal volume and the 21 percent decline in state and municipal volume.

In the classified construction groups, gains over last week are in public buildings and unclassified construction. Increases over the 1943 week are in bridges, and earthwork and drainage.

New capital for construction purposes for the week, $46,860,000, is made up of $300,000 in corporate security issues, $320,000 in state and municipal bond sales, and $46,240,000 in RFC loans for industrial improvements. The week's new financing brings 1944 volume to $231,097,000, a figure 51 percent below the $468,146,000 reported for the fifteen-week 1943 period.



CONTRACTS

Continental U. S. Only
(Thousand of Dollars)

	Week Ending Apr. 15 1943	Apr. 6 1944	Apr. 13 1944
Federal	$73,258	$23,353	$27,292
State & Municipal	9,251	2,764	1,928
Total public	$82,509	$26,117	$29,220
Total private	11,064	7,846	3,695
TOTAL	$93,573	$33,963	$32,915
Cumulative 1944	(15 weeks)		$517,000
1943	(15 weeks)		$1,087,844

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	1943	Cumulative 1944
NON-FEDERAL	$67,796	$140,265
Corp. Securities	2,250	53,476
State & Mun.	60,913	33,009
RFC Loans	1,500	53,780
FPHA Loans	3,133	.....
FEDERAL	$400,350	$90,832
TOTAL CAPITAL	$468,146	$231,097

ENR INDEX NUMBERS

Index base=100		1913	1926
Construction Cost	Apr. '44	297.70	143.10
Building Cost	Apr. '44	234.50	126.76
Volume	Mar. '44	103.	45.

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York

ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*

(Daily service also available—Write for details)

WATER SUPPLY

PROPOSED WORK

†Calif., Oakland and Alameda—East Bay Municipal Utility Dist., 512-16 St., Oakland, water sys. addns. consisting approx. 13,900 ft. 6- to 24-in. mains, valves, appurtenances, Calif. 4-581-N. $152,776. **FWA.**

†Fla., Apalachicola—City, reconstructing, imprv. existing WW and sewerage sys., Fla. 8-280-N. $60,562. **FWA.**

†Fla., Carrabelle—City, WW and sewerage sys., Fla. 8-300-F. $205,500. **FWA.**

Fla., Fort Myers—Made plans 4 pump. stations, 5 pumps. $300,000. Russell & Axon, Daytona Beach, engrs.

†Fla., Jacksonville—City, installing approx. 35,500 ft. 2- to 20-in. watermains, Fla. 8-298-N. $106,200. **FWA.**

†Ga., Glennville—City, approx. 21,400 ft. watermain and approx. 7,700 ft. sewer main, imprv. present disposal facilities, Ga. 9-207-F. $47,745. **FWA.**

Ill., Columbia—City, B. C. Hunt, mayor, City Hall, approx. 500,000 gal. rein.-con. reservoir, with necessary connections, auxiliaries, appurtenances, pump. equip., etc. $50,000. Russell & Axon, 4903 Delmar Blvd., St. Louis, Zone 8, Mo., engrs.

★**†Ill., Decatur**—City, addnl. pump. and treatment facilities, levee work for flood control, installing addnl. feeder mains, Ill. 11-288-N. $518,000. **FWA.**

†Ill., Winchester and Broadview—Villages of Winchester and Broadview, imprv. water sys., incl. booster sta., 2 booster pumps., etc., Ill. 11-297-N. $24,950. **FWA.**

Ia., Waterloo—Rath Packing Co., Waterloo, 3 story, 48x61 ft. water softening plant, to W. A. Klinger Constr. Co., 201 Warnock Bldg., Sioux City.

Kan., Leavenworth—Water softening plant, $125,000. Black & Veatch, 4607 Bway., Kansas City, Mo., engrs.

†Kan., Liberal—City, addnl. water supply facilities, incl. 2 wells, approx. 1,100 ft. watermain, two well pumps and pump houses and chlorination equip., Kan. 14-257-N. $49,000. **FWA.** CD 1/12—ENR 1/20.

†Mich., Ferndale (br. Detroit)—City, 4,200 lin. ft. 16 in. main, with valves, hydrants, other appurtenances in Wanda Ave. from connection with 54 in. Detroit main in Eight Mile Rd. to connection with 8 in. main Robert St., with connection to 6 in. main, Jarvis St., Mich. 20-311-N. $38,200. **FWA.**

†Mich., Gratiot (sta. Detroit)—Gratiot Twp., 3,600 ft. watermain, necessary fire hydrants, appurtenant work, Mich. 20-265-N. $29,600. **FWA.**

†Mich., Royal Oak—Royal Oak Twp., water facilities, incl. 5,900 lin. ft. 16 in. watermain, venturi meter and necessary appurtenances from 54 in. main in Eight Mile Rd., near John R. Rd., along Batelle Ave. to Nine Mile Rd., with connections to 8 in. mains on Maxlow and Madge Aves. and to 6 in. mains in Muir, Otis, Goulson and Woodruff Aves. and Nine Mile Rd., Mich. 20-319-N. $63,000. **FWA.**

Miss., Gulfport—City and Harrison Co., J. W. Miller, mayor and I. Ballenger, comr. and city clk., City Hall, water facilities, $75,000. H. D. Shaw, Salloum Bldg., archt.

†Mont., Great Falls—City, imprv. water sys., incl. addnl. 4,750,000 gal. storage reservoir, and approx. 10,120 lin. ft. mains, appurtenances, Mont. 24-108-N. $294,610. **FWA.** CD 1/6—ENR 1/13.

†N. J., Manville—Boro, 2 to 5 wells to yield plant capacity 800 gpm. and installing one 750 gpm. centrifugal pump with 60 hp. motor, appurtenant work, N.J. 28-180-N. $15,000. **FWA.**

†Okla., McAlester—City, imprv., constructing addns. WW sys., incl. necessary facilities for protection filtration plant against floods, necessary revisions, imprvs., addns. to filtration plant, addnl. high service pump. capacity, cleaning supply lines, cleaning and extens. to dist. sys. and appurtenant work, Okla. 34-194-N. $236,451. **FWA.** CD 2/10—ENR 2/17.

†S. D., Custer—City, 3,830 ft. watermains, installing chlorination equip., incl. valves, hydrants, meters, etc., S.D. 39-116-N. $30,000. **FWA.**

†Tenn., Lewisburg—Town, imprv. exten. WW sys., incl. pump. sta. on Duck River, approx. 45,900 ft. supply main, 1 MGD. filtration plant, approx. 9 mi. electric transmission line, appurtenances, Tenn. 40-257-N. $363,698. **FWA.**

Tex., Bowie—J. C. McNatt, mayor, City Hall, water imprvs., $15,000. Applied for FWA funds. E. L. Andrews, Court House, Wichita Falls, engr.

†Tex., Copperas Cove—City, addnl. WW facilities consisting new well, pump. facilities, appurtenant work. Tex. 41-660-F. $21,500. **FWA.** CD 12/20—ENR 12/23.

Tex., Hillsboro—Water pump units, 6¾ in. casing. $15,000.

Ont., Kitchener — Watermain extens., other imprvs. $20,000. M. Benequeqnat, City Hall, supt. and engr.

Ont., Oshawa—Exten. storage reservoir. $20,000. Pub. Utilities Comn., 100 S. Simcoe St., engrs.

BIDS ASKED

Bids Asked April 24

Colo., Aurora—City, 8,285 lin. ft. 12 and 6 in. c.i. water pipeline. $40,000. Plans deposit $10, $5 not returnable. C. H. Coberly, 1441 Welton St., engr. CD 3/30—ENR 4/6.

Location of ENR Correspondents

Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over.
ENR Engineering News-Record
CD Engineering News-Record Construction Daily
A-E-M Architect-Engineer-Management type of contract

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger; water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Named in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Unclassified
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads); BIDS ASKED (new announcements only. For full calendar. see also preceding issues of ENR):
LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Note: To comply with censorship requirements, addresses on some reports are being generalized. Data which would reveal the purpose of the improvements and the size are withheld. The name of contractor and general area are reported.

Bids Asked May 1

N. H., Glencliff—State Comptroller, [illegible] Main St., Concord, water supply [illegible] concrete collecting reservoir, intake [illegible] ture, watermains, appurtenances, at [illegible] Sanatorium. $60,000. Plans deposit [illegible] Metcalf & Eddy, 1300 Statler Bldg., [illegible] ton, Mass., engrs.

Bids Asked May 16

†Pa., Contesville—Veterans Admin. [illegible] mont Ave. between H and I Sts. [illegible] Wash., 25, D. C., deep well, pump [illegible] CD 3/29/43—ENR 4/1/43.

CONTRACTS AWARDED

Neb., Lincoln—Watermains, to Dobson Robinson, 823 First National Bank Bldg. $31,623. Bids 3/25. D. L. Erickson, engr.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

†Ala., Attalla—City, sewerage sys. exten. 54,000 lin. ft. laterals, approx. 6,000 trunk line sewers, approx. 7,100 lin. force mains, pump. station, appurtenances Ala. 1-124-N. $282,846. **FWA.** Polk, Pope & Hendon, Protective Life Bldg., Birmingham, engrs. CD 2/2—ENR 2/10.

†Calif., Oxnard—City, approx. 1,744 lin. outfall sewer, necessary appurtenances Calif. 4-560-N. $32,000. **FWA.**

†Calif., Santa Monica—City, approx. 42,[illegible] lin. ft. sanitary intercepting sewer, [illegible] sary appurtenances, Calif. 4-512-N. $[illegible] **FWA.**

†Calif., Vacaville—City, sewerage [illegible] addns., consisting of approx. 9,527 lin. 12- to 16-in. sewers, 28 manholes, 3 sep[illegible] ponds, appurtenant work, Calif. 4-[illegible] $61,911. **FWA.** CD 12/17—ENR 12/23.

Colo., Aurora—Aurora Sanitation Dist. mi. 10 in. and less sanitary sewer [illegible] $100,000. C. H. Coberly, 1441 Welton Denver, engr.

Fla., Winter Haven—Completed plans [illegible] mary disposal plant, incl. approx. 8,500 ft. vitr. clay pipe, castings, equip., [illegible] Russell & Axon, Daytona Beach, engrs.

†Ga., St. Simons and Sea Islands—Co[illegible] Roads & Revenues of Glynn Co., sani[illegible] sewerage sys. and sewage disposal pl[illegible] Ga. 9-280-F. $261,537. **FWA.**

†Ky., Louisville—City, rehabilitating v[illegible] necessary 2,848 lin. ft. 24 in. and 2,62[illegible] ft. 30 in. sewer, constructing siphon [illegible] nection under Bear Grass Creek to [illegible] existing 24 in. sewer to city of Louis[illegible] sys. Ky. 16-192-N. $23,657. **FWA.**

†Me., Portland—City, approx. 4,900 sewers with manholes, appurtenances sects. watermain, totaling approx. 1,5[illegible] with hydrants, appurtenant work, Me. 165-N. $57,385. **FWA.**

†Mich., Hazel Park (br. Royal Oak)—City, laying 11,500 ft. sanitary sewers, [illegible] 20-316-N. $61,885. **FWA.**

†Mo., St. Louis County—Melrose San[illegible] Dist. St. Louis County, 4625 Ravenwood St. Louis County, St. Louis, Zone 22, [illegible] ing surveys, sanitary relief sewers in dist[illegible] $30,000. **FWA.** Russell & Axon, 4903 Del[illegible] Blvd., St. Louis, Zone 8, engrs.

†O., Sidney—City, sewerage sys. [illegible] 4,685 lin. ft. relief sanitary sewer, Ohio 275-N. $29,700. **FWA.**

S. D., Winner—City, E. Nicholson, [illegible] City Hall, sewage disposal plant, [illegible] supply imprvs. $30,000. J. Staven, [illegible] City, engr.

Tenn., Dyersburg — City, L. D. [illegible] ner, mayor, City Hall, sewers, $75,000. [illegible] & Veatch, 4706 Bway., Kansas City, [illegible] engrs.

†Tex., Brackettville—A. L. Terry, [illegible] City Hall, sewer imprvs., Tex. 41-[illegible] $155,000. **FWA.** J. C. Calhoun, Jr., Marchants Exchange Bldg., Houston. CD 4/10.

Tex., Houston—City, sanitary sewers [illegible] 29, E. 28, E. 27, Eastman, Sylvester, Angelina Sts. Over $25,000.

★**†Va., Newport News** — Hampton Sanitation Dist. Comn., sewer facil[illegible] incl. 3.75 mi. trunk sewer, gravity and